

1        **Listing of Claims:**

2        1—22. (Cancel)

3

4        23. (New) A method for printing, comprising:  
5            obtaining color space requirements of a document to be printed, wherein  
6            the requirements define a boundary of a color space associated with the document;  
7            obtaining a rendering intent from an author;  
8            selecting a printer from among a plurality of printers based on a best fit as  
9            determined by the color space requirements of the document, the rendering intent  
10          of the author and gamuts of each of the plurality of printers, wherein each gamut  
11          defines a boundary of a device colors space indicating colors printable by the  
12          printer; and

13          determining if color mapping is needed, and if so selecting a color map  
14          from a selection comprising:

15            a first color map configured to map colors, located between the  
16            boundary of the device colors space and the boundary of the input color space, to  
17            the boundary of the device colors space, and to not map colors within the device  
18            colors space to preserve their accuracy; and

19            a second color map configured to map colors, located between the  
20            boundary of the device colors space and the boundary of the input color space,  
21            past the boundary of the device colors space and into the device colors space, and  
22            to map colors within the device colors space to preserve color separation between  
23            them and the colors mapped into the device colors space.

1        24. (New) The method of Claim 23, wherein selecting the color map  
2 additionally comprises:

3              giving an author an opportunity to select a color map that balances  
4 preservation of color accuracy against color separation; and  
5              using the selected color map in printer selection.

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7        25. (New) The method of Claim 23, wherein the selection of color maps  
8 additionally comprises:

9              a third color map, which balances not mapping device colors to preserve  
10 their accuracy against mapping device colors to preserve color separation between  
11 device colors and colors mapped into the device colors space, wherein the  
12 balancing comprises mapping device colors by less distance within the device  
13 colors space than they are mapped by the second mapping.

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15        26. The method of claim 23, additionally comprising:

16              mapping colors within the document according to the selected color map;  
17 and

18              printing the document.

19

20        27. (New) The method of Claim 23, wherein determining if color  
21 mapping is needed is based on the color space requirements of the document, the  
22 rendering intent of the author and the device colors space of the selected printer.

1        28. The method of claim 23, wherein the best-fit analysis, comprises:  
2              comparing volumes of the color space requirement of the document to the  
3              gamuts of each of the plurality of printers;  
4              comparing a percentage of colors within the document included in each of  
5              the gamuts of each of the plurality of printers; or  
6              comparing area within the document associated with colors in each of the  
7              gamuts of each of the plurality of printers.

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9        29. The method of claim 23, wherein gamuts of each of the plurality of  
10      printers are obtained form a library of printer gamut information.

11  
12      30. The method of claim 23, wherein gamuts of each of the plurality of  
13      printers are obtained directly from the printers themselves.

1       31. (New) A print system, comprising:

2           a documents requirement module configured to obtain a color space  
3 requirements of a document to be printed, wherein the requirements define a  
4 boundary of a color space associated with the document;

5           a preferences interface configured to obtain a rendering intent from an  
6 author; and

7           an evaluation module configured for selecting a printer from among a  
8 plurality of printers based on a best fit as determined by the color space  
9 requirements of the document, the rendering intent of the author and gamuts of  
10 each of the plurality of printers, wherein each gamut defines a boundary of a  
11 device colors space indicating colors printable by the printer;

12          wherein the evaluation module determines if color mapping is needed, and  
13 if so uses a color map from a selection comprising:

14           a first color map based on absolute colorimetric rendering intent,  
15 wherein colors between the boundary of the device colors space and the boundary  
16 of the input color space are mapped to the boundary of the device colors space,  
17 and colors within the device colors space are not mapped to preserve their  
18 accuracy; and

19           a second color map based on perceptual rendering intent, wherein  
20 colors between the boundary of the device colors space and the boundary of the  
21 input color space are mapped past the boundary of the device colors space and into  
22 the device colors space, and colors within the device colors space are mapped to  
23 preserve color separation between them and the colors mapped into the device  
24 colors space.

1  
2       32. (New) The print system of Claim 31, wherein the selection  
3 additionally comprises:

4                 a third color map, configured combine characteristics of the first and  
5 second color maps.

6  
7       33. (New) The print system of Claim 31, wherein the print system is  
8 configured to allow selection between the color maps, and the selection comprises:

9                 selecting the color map based on absolute colorimetric rendering intent  
10 when user input indicates a preference to preserve color accuracy within the  
11 device colors space; and

12                 selecting a color map based on perceptual rendering intent when user input  
13 indicates a preference to preserve color separation between colors within the  
14 device colors space and colors outside the device colors space.

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16       34. (New) The print system of Claim 31, wherein the evaluation module  
17 obtains the gamuts of each of the plurality of printers from:

18                 a library of printer gamut information; or

19                 directly from the plurality of printers.

1       35. The print system of claim 31, wherein the gamut management  
2 module is configured to perform a best-fit analysis, the analysis comprising:

3             comparing the color space requirements of the document with a device  
4 colors space of each of two or more printers; and

5             comparing how well each printer would respond to an author's indicated  
6 preference for absolute colorimetric rendering intent or perceptual rendering  
7 intent.

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9       36. The printer system of claim 31, wherein the printer system is  
10 configured to allow selection between the first and second color map based on an  
11 author's indicated preference for absolute colorimetric rendering intent or  
12 perceptual rendering intent.

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14       37. The printer system of claim 31, additionally comprising:

15             a sensor array configured to evaluate printed documents and update the  
16 boundary defining the device colors space of each printer.

1       38. (New) A print system configured to select a printer to print a  
2 document, comprising:

3             a plurality of printers, wherein a gamut of each printer is defined by a  
4 boundary indicating a device colors space comprising colors printable by the  
5 printer;

6             a sensor array configured to evaluate printed documents and update the  
7 boundary defining the device colors space for each printer;

8             a print server configured to select a printer from among the plurality of  
9 printers, wherein the selecting is based on a best fit analysis as determined by  
10 color space requirements of the document, a rendering intent of an author and  
11 gamuts of each of the plurality of printers; and

12             a custom gamut mapping module, comprising:

13                 a first color map based on absolute colorimetric rendering intent,  
14 wherein colors outside the boundary of a device colors space are mapped to  
15 the boundary of the device colors space, and colors within the device colors  
16 space are not mapped to preserve their accuracy; and

17                 a second color map based on perceptual rendering intent, wherein  
18 colors outside the boundary of the input color space are mapped into the  
19 device colors space, and colors within the device colors space are mapped  
20 to preserve color separation between them and the colors mapped into  
21 the device colors space.

1           39. (New) The print system of Claim 38, wherein the custom gamut  
2 mapping module additionally comprises:

3                 a third color map configured to map device colors by less distance in the  
4 device colors space than the colors are mapped by the second mapping.

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6           40. (New) The print system of Claim 38, wherein the print system is  
7 configured to allow selection between the color maps, and the selection comprises:

8                 selecting the color map based on absolute colorimetric rendering intent  
9 when user input indicates preference to preserve color accuracy within the device  
10 colors space; and

11                 selecting a color map based on perceptual rendering intent when user input  
12 indicates preference to preserve color separation between colors within the device  
13 colors space and colors outside the device colors space.

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15           41. (New) The print system of Claim 38, wherein the print system is  
16 configured to allow selection between the color maps, and the selection  
17 additionally comprises:

18                 selecting a color map that balances preservation of color accuracy and color  
19 separation when indicated by user input.

1           42. The print system of claim 38, wherein the best-fit analysis,  
2 comprises:

3                 comparing a color space required by the document with an input color  
4 space of each of two or more printers; and

5                 selecting a printer from among those compared according to a criterion  
6 based in part on an author's indicated preference for absolute colorimetric  
7 rendering intent or perceptual rendering intent.

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9           43. (New) The print system of claim 38, wherein determining if color  
10 mapping is needed is based on the color space requirements of the document, the  
11 rendering intent of the author and the device colors space of the selected printer.

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13           44. The print system of claim 38, wherein the best-fit analysis,  
14 comprises:

15                 using an algorithm to determine best fit, wherein the algorithm is selected  
16 in response to input from the author.